

AMENDED CLAIMS

[received by the International Bureau on 28 December 2004 (28.12.2004);
original claims 1-10 unchanged; new claims 11 and 12 added (4 pages)]

1. A device for counting fine particles comprising,
a transparent lower substrate having fine lattice patterns for counting the fine
5 particles formed on an upper surface thereof; and a transparent upper substrate stacked
on the lower substrate, wherein the upper substrate comprises a fill chamber having a
predetermined height from a bottom surface of the upper substrate and forming a
space for filling a sample including the fine particles on the fine lattice patterns and an
injecting hole for the sample communicated with the fill chamber.
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2. The device according to claim 1, wherein the upper substrate further
comprises a discharge hole communicated with the fill chamber for discharging the
sample or an air bubble from the fill chamber.
- 15 3. The device according to claim 1, wherein the upper and lower substrates
are bonded and thus form an integrated body.
4. The device according to claim 3, wherein the upper and lower substrates
are bonded by a heating, an adhesive, a coating, a pressurization, a vibration or an
20 ultrasonic bonding.
5. The device according to claim 1, wherein the fill chamber is formed with
a height of 50~200 μm .

6. The device according to claim 1, wherein an area of the fill chamber in the upper and lower substrates is transparent and the fine lattice patterns are formed in a predetermined place of the area in which the fill chamber is formed on the lower substrate.

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7. The device according to claim 1, wherein an indicative member is formed on the upper substrate for indicating a position of the fine lattice patterns.

8. The device according to claim 1, wherein the upper or lower substrate is
10 made of plastics.

9. The device according to claim 1, wherein the fine particles are blood cells or bacteria.

15 10. A manufacturing method of a device for counting fine particles comprising steps of;

forming fine lattice patterns on a predetermined place of a lower substrate;

forming a fill chamber having a predetermined height for filling a sample including the fine particles, an injecting hole and a discharge hole communicated with
20 the fill chamber in an upper substrate; and

bonding the upper and lower substrates.

11. The method according to claim 10, wherein the step of forming fine lattice patterns on a predetermined place of the lower substrate comprising steps of:

forming a photoresist layer on a plate;

forming a mask pattern having fine lattice patterns on the plate by patterning the photoresist layer;

etching the plate by using the mask pattern as an etching mask;

5 removing the mask pattern to obtain the plate as a mold wherein the fine lattice patterns are formed;

pouring melted plastics on the mold, and then cooling and curing the plastics on the mold; and

removing the mold to obtain the plastics as the lower substrate wherein the fine lattice patterns are formed.

12. The method according to claim 10, wherein the step of forming fine lattice patterns on a predetermined place of the lower substrate comprising steps of:

forming a photoresist layer on a plate;

15 forming a mask pattern having fine lattice patterns on the plate by patterning the photoresist layer;

etching the plate by using the mask pattern as an etching mask;

removing the mask pattern to obtain the plate as a master wherein the fine lattice patterns are formed;

20 forming Ni layer on the master by electroless plating or electrolysis plating;

removing the master to obtain the Ni layer as a mold wherein the fine lattice patterns are formed;

pouring melted plastics on the mold, and then cooling and curing the plastics on the mold; and

removing the mold to obtain the plastics as the lower substrate wherein fine lattice patterns are formed.